Amendments To The Claims

The following list of the claims replaces all prior versions and lists of the claims in this application.

Claims 1-27 (Canceled).

28. (Currently amended) At least one high-k device, comprising:

a structure having a strained substrate formed thereover, the strained substrate comprising an uppermost strained-Si epi layer, a middle relaxed Si_{1-x}Ge_x layer and a lowermost graded Si_{1-y} Ge_y layer, the uppermost strained-Si epi layer being disposed directly on the middle relaxed Si_{1-x}Ge_x layer;

at least one dielectric gate oxide portion over the strained substrate, the at least one dielectric gate oxide portion having a dielectric constant of greater than about 4.0; and

a device over each of the at least one dielectric gate oxide portion to complete the at least one high-k device.

- 29. (Previously presented) The device of claim 28, the uppermost strained-Si epi layer having a thickness of from about 100 to 500Å; the middle relaxed Si_{1-x}Ge_x layer having a thickness of from about 1000 to 50,000Å; and the lowermost graded Si_{1-y} Ge_y layer having a thickness of from about 200 to 50,000Å.
- 30. (Previously presented) The device of claim 28, where x is greater than 0 and less than about 0.50 and where y is 0 or about 0 proximate the structure and increases to about x proximate the middle relaxed $Si_{1-x}Ge_x$ layer, wherein $x \ge y$.

31. (Previously presented) At least one high-k device, comprising:

a structure having a strained substrate formed thereover, the strained substrate comprising an uppermost strained-Si epi layer, a middle Si_{1-x}Ge_x layer and a lower silicon oxide layer;

at least one dielectric gate oxide portion over the strained substrate, the at least one dielectric gate oxide portion having a dielectric constant of greater than about 4.0; and

a device over each of the at least one dielectric gate oxide portion to complete the at least one high-k device.

- 32. (Previously presented) The device of claim 31, wherein the uppermost strained-Si epi layer has a thickness of from about 100 to 500Å, the middle Si_{1-x}Ge_x layer has a thickness of from about 700 to 1200Å and the lower silicon oxide layer has a thickness of from about 800 to 2000Å.
 - 33. (Previously presented) At least one high-k device, comprising:

a structure having a strained substrate formed thereover, the strained substrate comprising an uppermost strained-Si epi layer over an upper relaxed $Si_{1-x}Ge_x$ layer over a graded $Si_{1-y}Ge_y$ layer over an epi layer over a lowermost relaxed $Si_{1-z}Ge_z$ layer, wherein $x \ge y \ge z$;

at least one dielectric gate oxide portion over the strained substrate, the at least one dielectric gate oxide portion having a dielectric constant of greater than about 4.0; and

a device over each of the at least one dielectric gate oxide portion to complete the at least one high-k device.

34. (Previously presented) The device of claim 33, the uppermost strained-Si epi layer having a thickness of from about 100 to 500Å; the upper relaxed Si_{1-x}Ge_x layer having a thickness of from about 1000 to 50,000Å; the graded Si_{1-y} Ge_y layer having a thickness of from about 2000 to 50,000Å; the epi layer having a thickness of from about

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20 to 500Å; and the lowermost relaxed Si_{1-z} Ge_z layer having a thickness of from about 200 to 50,000 Å.

- 35. (Previously presented) The device of claim 33, the uppermost strained-Si epi layer having a thickness of from about 150 to 300Å; the upper relaxed Si_{1-x}Ge_x layer having a thickness of from about 2000 to 40,000Å; the graded Si_{1-y} Ge_y layer having a thickness of from about 500 to 25,000Å; the epi layer having a thickness of from about 50 to 200Å; and the lowermost relaxed Si_{1-z} Ge_z layer having a thickness of from about 500 to 25,000Å.
- 36. (Previously presented) The device of claim 33, where x is no less than y and less than about 0.50, where y is no less than z proximate the epi layer and increases to about x proximate the upper relaxed $Si_{1-x}Ge_x$ layer, and where z is greater than 0 and less than about 0.50.
- 37. (Previously presented) The device of claim 33, wherein the at least one dielectric gate oxide portion being comprised of HfO₂ or HfSiO₄.
- 38. (Previously presented) The device of claim 41, wherein the relaxed Si_{1-y} Ge_y layer has a thickness of from about 200 to 30,000Å, the constant Si_{1-y} Ge_y layer has a thickness of from about 200 to 20,000Å, the silicon epi layer has a thickness of from about 20 to 500Å, the constant Si_{1-z} Ge_z layer has a thickness of from about 200 to 20,000Å, and the uppermost strained-Si epi layer has a thickness of from about 20 to 500Å.
- 39. (Previously presented) The device of claim 41, wherein the relaxed Si_{1-y} Ge_y layer has a thickness of from about 300 to 5000Å, the constant Si_{1-y} Ge_y layer has a

thickness of from about 300 to 5000Å, the silicon epi layer has a thickness of from about 50 to 300Å, the constant Si_{1-z} Ge_z layer has a thickness of from about 300 to 5000Å, and the uppermost strained-Si epi layer has a thickness of from about 50 to 300Å.

40. (Previously presented) The device of claim 41, wherein the at least one dielectric gate oxide portion is comprised of HfO₂ or HfSiO₄.

41. (Previously presented) At least one high-k device, comprising:

a structure having a strained substrate formed thereover, the strained substrate comprising an uppermost strained-Si epi layer, a relaxed Si_{1-y} Ge_y layer under the uppermost strained-Si epi layer, a constant Si_{1-y} Ge_y layer under the relaxed Si_{1-y} Ge_y layer, a silicon epi layer under the constant Si_{1-y} Ge_y layer, and a constant Si_{1-z} Ge_z layer under the silicon epi layer, wherein the uppermost relaxed-Si epi layer is comprised of Si_{1-x} Ge_x wherein x is constant or graded;

at least one dielectric gate oxide portion over the strained substrate, the at least one dielectric gate oxide portion having a dielectric constant of greater than about 4.0; and

a device over each of the at least one dielectric gate oxide portion to complete the at least one high-k device.

42. (Previously presented) At least one high-k device, comprising:

a structure having a strained substrate formed thereover, the strained substrate comprising at least an uppermost strained-Si epi layer having a dislocation density of strained-Si epi of less than about 1E6/cm²;

at least one dielectric gate oxide portion over the strained substrate, the at least one dielectric gate oxide portion having a dielectric constant of greater than about 4.0; and

a device over each of the at least one dielectric gate oxide portion to complete the at least one high-k device.

- 43. (Previously presented) The structure of claim 42, wherein the at least one dielectric gate oxide portion is comprised of Hf0₂, HfSi0₄, N-doped hafnium. HfSiO_X, ZrO₂, ZrSiO_X or N-doped zirconium silicate.
- 44. (Previously presented) The device of claim 42, wherein the structure is a silicon substrate or a germanium substrate.
- 45. (Previously presented) The device of claim 42, wherein the strained substrate is comprised of only the uppermost strained-Si epi layer.
 - 46. (Previously presented) At least one high-k device, comprising:
- a structure having a strained substrate formed thereover, the strained substrate comprising only an uppermost strained-Si epi layer having a thickness of from about 100 to 500Å;
- at least one dielectric gate oxide portion over the strained substrate, the at least one dielectric gate oxide portion having a dielectric constant of greater than about 4.0; and
- a device over each of the at least one dielectric gate oxide portion to complete the at least one high-k device.
- 47. (Previously presented) The device of claim 46, the uppermost strained-Si epi layer having a thickness of from about 150 to 300Å.
- 48. (Previously presented) The device of claim 46, the uppermost strained-Si epi layer having a thickness of from about 200 to 300Å.